

REMARKS/ARGUMENTS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments and the following remarks. Claims 1-4 and 8-10 are in the application. Claim 1 has been amended to better define the invention and to remove reference numerals. Claims 2-4 have also been amended to remove reference numerals. Claims 5-7 have been canceled in favor of new independent claims 8-10. Support for the claims may be found, *inter alia*, in the disclosure at page 5, FIGS. 1c and 3-5 and the original claims. Reconsideration is expressly requested.

Claims 1-7 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Claim 1 was said to be unclear as to which shaft has a clutch ring and as to which shaft the sprags are installed on. Claim 1 was also said to be indefinite because of the use of the phrase "especially." In response, claim 1 has been amended, *inter alia*, to recite that the "second shaft has a clutch ring" and that the sprags "are installed on the first shaft". The

phrase "especially" has also been deleted from claim 1.

Claim 5 was said to improperly depend on claim 1 because the second shaft does not have both a clutch ring and a moveable sliding sleeve. In response, claim 5 has been canceled and replaced with new independent claim 8 corresponding to the embodiment shown in FIG. 3.

Claim 7 was said to improperly depend on claim 1 because the sprags were said not to be installed on the first shaft, and the claim was said to be unclear as to which inner side has the inner cone. In response, claim 7 has been canceled and replaced with new independent claim 10 corresponding to the embodiment shown in FIG. 5 and including the elements of a first and a second drive with a first and a second inner cone, respectively.

Claim 6 has also been canceled and replaced with new independent claim 9 corresponding to the embodiment shown in FIG. 4.

It is respectfully submitted that all currently pending claims fully comply with 35 U.S.C. § 112, second paragraph, and Applicant respectfully requests that the Examiner's rejection on this basis be withdrawn.

Claims 1-4 were rejected under 35 U.S.C. §102(b) as being anticipated by *U.S. Patent No. 3,119,479 to Lund*. Claims 1, 2, 5, and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by *U.S. Patent No. 3,078,974 to Mann*. Claims 1, 2, 5, and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by *Nakao JP 06017851 A*. Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over *U.S. Patent No. 1,955,879 to Griswold* in view of *Nakao*.

Essentially, the Examiner's position was that each of *Lund*, *Mann* and *Nakao* disclose the clutch device recited in the rejected claims and that *Griswold* discloses the clutch device recited in claim 7 except for sprags acting in pairs, which the Examiner considered to be disclosed in *Nakao*. The Examiner asserted that it would have been obvious to one having ordinary skill in the art to replace the rollers of *Griswold* with the sprags acting in

pairs disclosed by *Nakao* to improve performance of the clutch device of *Griswold*.

These rejections are respectfully traversed.

As set forth in claim 1 as amended, Applicant's invention provides a clutch device for the couplable connection of two rotatably mounted machine parts. The clutch device includes a first shaft and a second shaft that has a clutch ring with sprags on the inside. The sprags act against each other in pairs, respectively. The sprags are installed on the first shaft in an encircling manner.

The first shaft includes a first clamping face and the second shaft includes a second clamping face. The first clamping face and the second clamping face are exactly parallel and form an angle α of greater than 0 degrees to about 10 degrees in relation to a rotational axis.

In this manner, Applicant's clutch device couples two rotatably mounted machine parts in a versatile manner so that the

machine parts can have a variety of rotational positions with varying angles between the clamping faces and the rotational axis of the moving parts, thereby facilitating the manufacturing of a clutch device.

None of the cited references discloses or suggests a clutch device having the structure set forth in claim 1 as amended, including clamping faces, coupled via scrags to each other, that form an angle greater than 0 degrees to about 10 degrees in relation to a rotational axis.

Lund discloses a clutch device with sprags 13, 14 directly connecting coaxial shafts so that the clamping faces between race members 11 and 15 are coaxial with the race members and the rotational axis of the race members. Thus, the angle between the rotational axis and the clamping faces is 0 degrees. See FIG. 2 of *Lund*. In contrast, Applicant's clutch device as recited in amended claim 1 has an angle between the parallel clamping faces and a rotational axis of greater than 0 degrees to about 10 degrees.

Mann discloses the connection of a shaft 2 and a cylindrical member 1 via locking elements 6, 7 wherein shaft 2 has an axially inclined surface 4 on which the locking elements are connected. See FIGS. 1-4 of *Mann*. The inner surface of cylindrical member 1 is parallel to the rotational axis of the device, so that the clamping faces of the device are not parallel. In contrast, Applicant's clutch device as recited in amended claim 1 has exactly parallel clamping faces connected to the sprags.

Nakao discloses a clutch device with sprags 4 and clamping faces between clutch wheels 2 and 3 that are coaxial with the wheels and the rotational axis of the wheels. Thus, the angle between the rotational axis and the clamping faces is 0 degrees. See FIG. 2A of *Nakao*. In contrast, Applicant's clutch device as recited in amended claim 1 has an angle between the parallel clamping faces and a rotational axis of greater than 0 degrees to about 10 degrees.

Thus, it is respectfully submitted that amended claim 1, and amended claims 2-4 which depend thereon, are patentable over the *Lund*, *Mann*, and *Nakao* references.

New claim 8 is similar to claim 1 but specifies that the second clamping face belongs to a sliding sleeve, rather than the second shaft. Like amended claim 1, new claim 8 recites that the clamping faces form an angle greater than 0 degrees to about 10 degrees in relation to a rotational axis. Accordingly, it is respectfully submitted that new claim 8 is likewise patentable over the *Lund*, *Mann*, and *Nakao* references.

New claim 9 recites that the first face of a first rotating machine part and the outer side of an axially movable sliding sleeve are exactly parallel and form an angle of greater than 0 degrees to about 10 degrees in relation to a rotational axis. Accordingly, it is respectfully submitted that new claim 9 is likewise patentable over the *Lund*, *Mann*, and *Nakao* references.

As set forth in new claim 10, Applicant's invention provides a clutch device for the couplable connection of two rotatably mounted machine parts. The clutch device includes a first drive with a first inner cone and a second drive with a second inner cone. A plurality of sprags act against each other in pairs,

respectively. An axially movable sliding sleeve is mounted on a drive shaft. The sliding sleeve has a double cone including a first cone clamping face and a second cone clamping face coupled together via the sprags with the first inner cone and the second inner cone, respectively.

The first cone clamping face and the first inner cone are exactly parallel and form an angle α of greater than 0 degrees to about 10 degrees in relation to a rotational axis. The second cone clamping face and the second inner cone are exactly parallel and form an angle α of greater than 0 degrees to about 10 degrees in relation to a rotational axis.

In this manner, Applicant's clutch device couples two rotatably mounted machine parts in a versatile manner so that the machine parts can have a variety of rotational positions with varying angles between the clamping faces and the inner cones of the drives and the rotational axis of the moving parts, thereby facilitating the manufacturing of a clutch device.

Griswold discloses a clutch device with shafts 10 and 15 connected to each other by rollers 47. Furthermore, *Griswold* discloses connecting drives with outer cones (extensions 41 and 42). In contrast, Applicant's clutch device as recited in new claim 10 discloses using the inner cones of the first and second drives to connect the drives.

Nakao also fails to disclose connecting drives with the inner cones of the first and second drives. Thus, Applicant's clutch device as recited in new claim 10 is patentable over a combination of *Griswold* and *Nakao*, as both references fail to disclose connecting drives with inner cones of the drives.

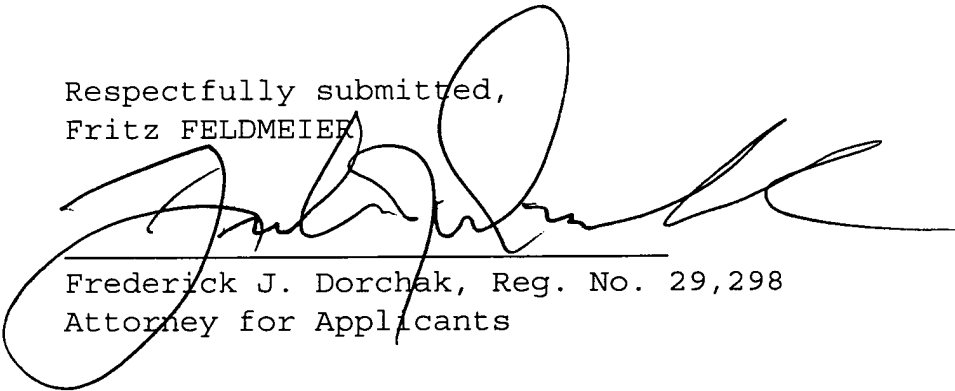
Moreover, it is respectfully submitted that the defects of *Lund*, *Mann*, and *Nakao* with respect to amended claim 1 and new claims 8-9 are nowhere remedied by *Griswald* as Applicant's clutch device forms the connection via sprags which it is respectfully submitted operate to transmit torque much differently than rollers as taught by *Griswald*.

Accordingly, it is respectfully submitted that claims 1-4 and 8-10 are patentable over the cited references.

In summary, claims 1-4 have been amended, claims 5-7 have been canceled, and new claims 8-19 have been added, A check in the amount of \$110.00 is enclosed in payment of the fee for one (1) additional independent claim over three (3) for a Small Entity. In view of the foregoing, it is respectfully requested that the claims be allowed and this case be passed to issue.

Respectfully submitted,
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Enclosure: Check in the amount of \$110.00

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 26, 2009.



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